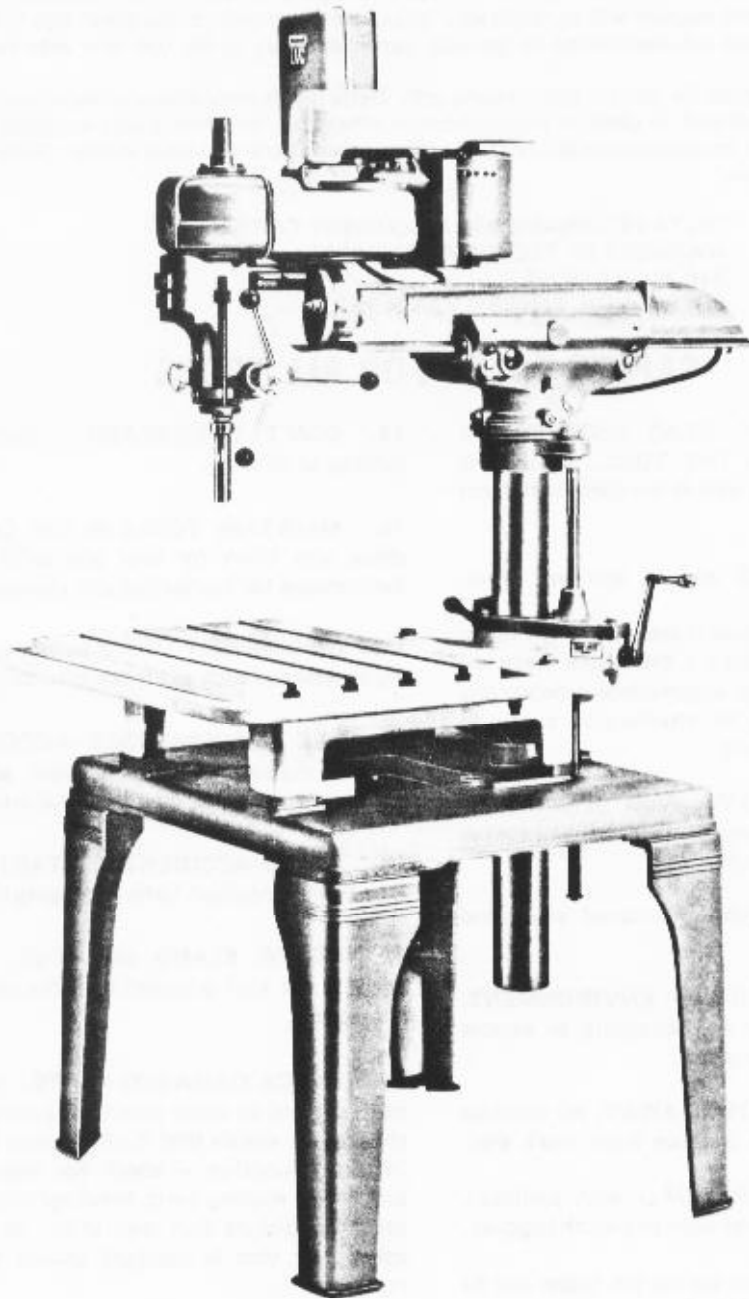


RAM TYPE RADIAL DRILL PRESS

INSTRUCTION MANUAL



DATED 8-20-85

439-01-651-5002

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 **DELTA**

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY.

IMPORTANT

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. Delta Machinery strongly recommends that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you have written Delta Machinery and we have advised you.

DELTA INTERNATIONAL MACHINERY CORP.
MANAGER OF TECHNICAL SERVICES
246 ALPHA DRIVE
PITTSBURGH, PENNSYLVANIA 15238

SAFETY RULES FOR ALL TOOLS

- 1. FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.
- 2. KEEP GUARDS IN PLACE** and in working order.
- 3. GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.
- 4. REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".
- 5. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 6. DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
- 7. KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
- 8. MAKE WORKSHOP CHILDPROOF** - with padlocks, master switches, by removing starter keys or switch toggles.
- 9. DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
- 10. USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
- 11. WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Non-slip foot wear is recommended. Wear protective hair covering to contain long hair.
- 12. ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operations is dusty. Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses.
- 13. SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
- 14. DON'T OVERREACH.** Keep proper footing and balance at all times.
- 15. MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 16. DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.
- 17. USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.
- 18. AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.
- 19. NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
- 20. CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function - check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 21. DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- 22. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
- 23. DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol or any medication.
- 24. MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or reconnected.

UNPACKING AND CLEANING

The drill press is shipped complete in one carton with the ram and drill press head positioned on the table for ease in handling. Instructions for assembling the ram and head to the cradle will follow. The drill press stand is shipped in a separate carton.

Carefully unpack the drill press and stand from the cartons. Remove the protective coating from the machined surfaces. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover all unpainted surfaces with a good quality paste wax.

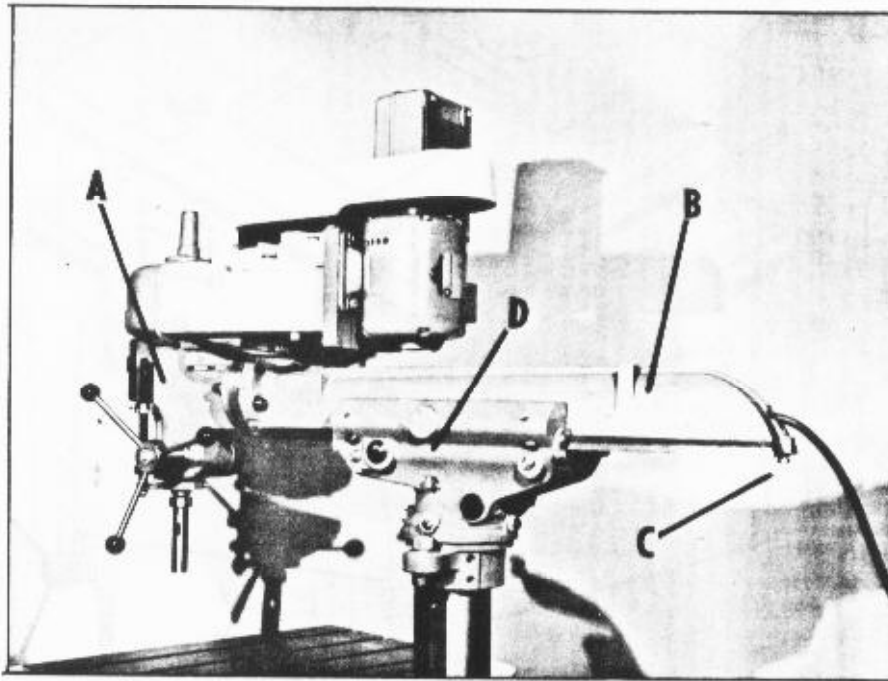


Fig. 2

ASSEMBLE RAM TO CRADLE

The ram (B) and drill press head (A) Fig. 2, are shipped assembled and is positioned on the table for ease in handling. To assemble the ram to the cradle, proceed as follows:

1. Remove the stop screw and nut (C) Fig. 2.
2. The drill head (A) and ram assembly (B) should be slid into position in the cradle (D), as shown in Fig. 2. **IMPORTANT:** One end of the cradle (D) is indicated as the front end and the drill head (A) must be at this end. Also care should be taken to prevent jarring the ball bearings in the cradle when sliding the ram into position.
3. Guide the ram (B) carefully in the cradle (D) making sure that it is properly seated and that it slides freely.
4. After assembling, replace the stop screw and nut (C) Fig. 2.

ASSEMBLING STAND

1. Fasten the four legs (A) to the stand base (B) using the twelve 1/2"-13 X 1-1/4" hex head screws (C) and flat washers (D), as shown in Fig. 3.

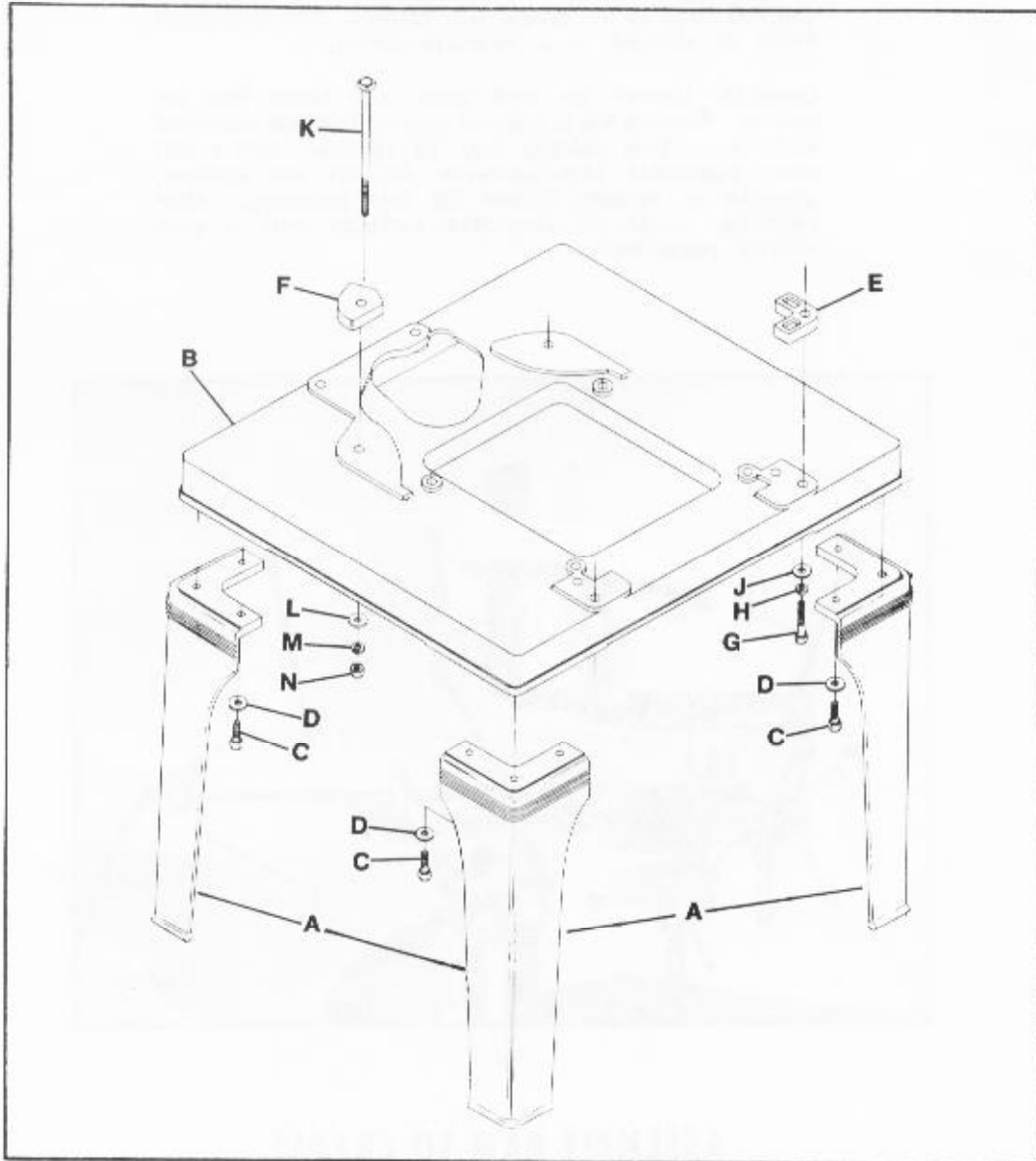


Fig. 3

ASSEMBLING DRILL PRESS TO STAND

1. Place the two front spacers (E) and two rear spacers (F) in position on top of the stand base, as shown in Fig. 3.
2. Place the drill press on the four spacers (E) and (F) making sure the holes in the bottom of the drill press base line up with the holes in the four spacers.
3. Using the two 1/2"-13 X 2-1/4" hex head screws (G), lockwashers (H) and flat washers (J), fasten the front end of the drill press base to the stand. The holes in the bottom front of the drill press base are threaded.
4. Place the two flat washers (L) on the two 1/2"-13 X 9" square head bolts (K) and insert the bolts down through the top of the drill press base through the holes in the spacers (F) and through the holes in the rear of the stand. Fasten in place using the lockwasher (M) and jam nut (N), Fig. 3.

ELECTRICAL CONNECTIONS

IMPORTANT: Make sure the electrical characteristics are the same between the motor nameplate and the power source and make sure the power circuit the drill press will be used on is properly fused and that the wire size is correct, as shown in Fig. 4. **MAKE SURE THE DRILL PRESS IS PROPERLY GROUNDED.**

WIRE AND FUSE SIZE

HP	SINGLE PHASE				THREE PHASE			
	115 VOLTS		230 VOLTS		200-230 VOLTS		460 VOLTS	
	WIRE SIZE	TIME LAG FUSE*	WIRE SIZE	TIME LAG FUSE*	WIRE SIZE	TIME LAG FUSE*	WIRE SIZE	TIME LAG FUSE*
1/2	12	20	14	15	14	15	14	15

Fig. 4

SINGLE PHASE INSTALLATION

If the motor on your machine is wired for 115-V single phase, the power cord is equipped with a plug that has two flat, parallel current-carrying prongs and one longer round or "U"-shaped, ground prong which requires a mating 3-conductor grounded type receptacle as shown in Fig. 5.

An adapter is available to permit the use of 3-conductor type plugs in 2-conductor outlets, however, it is preferable to use the properly grounded receptacle as shown in Fig. 5.

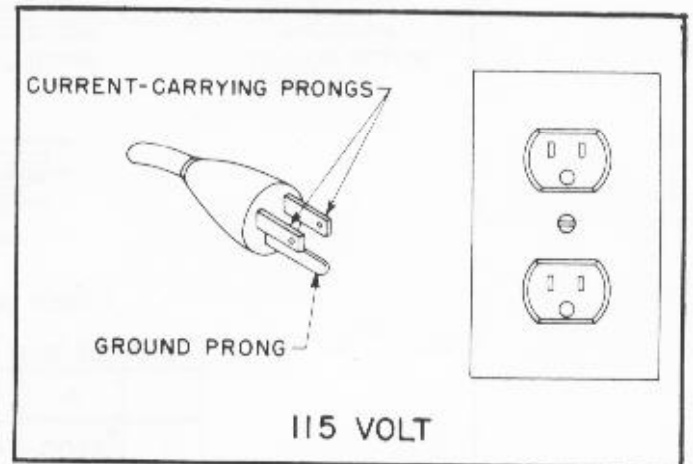


Fig. 5

If the motor on your machine is wired for 230V single phase, the power cord is equipped with a plug that has two flat, current-carrying prongs in tandem, and one round or "U"-shaped longer ground prong. This is used only with the proper mating 3-conductor grounding type receptacle, as shown in Fig. 6. When the three-prong plug on your machine is plugged into a grounded 3-conductor receptacle, the long ground prong on the plug contacts first so the machine is properly grounded before electricity reaches it.

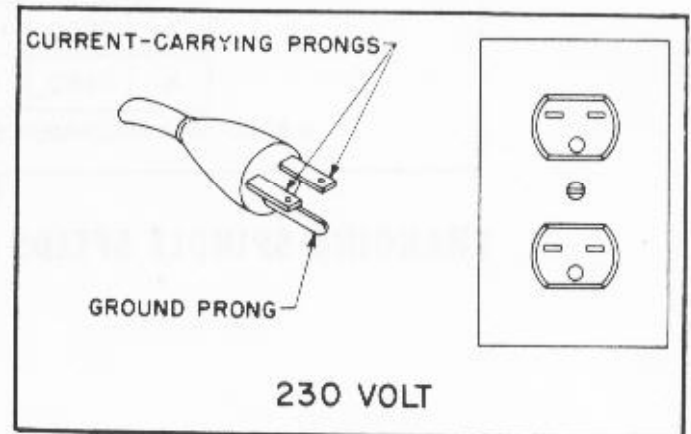


Fig. 6

THREE PHASE INSTALLATION

If the motor on your machine is wired for 200V, 230V, or 460V three phase, the necessary wiring from the starter to the power source should be completed by a competent electrician.

IN ALL CASES, MAKE SURE THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED.

OPERATING CONTROLS AND ADJUSTMENTS

MOTOR AND SPINDLE SPEEDS

The motor shipped with your machine is a 1/2 H.P. 1725 RPM motor.

With a 1725 RPM motor, spindle speeds of 175, 365, 380, 600, 695, 765, 1030, 1250, 1380, 1450, 2200, 2300, 2800, 4000, 4750 and 8200 RPM are available with your machine. Refer to Fig. 7, for the belt positions on the spindle, motor, and upper and lower jackshaft pulleys to obtain the above listed speeds.

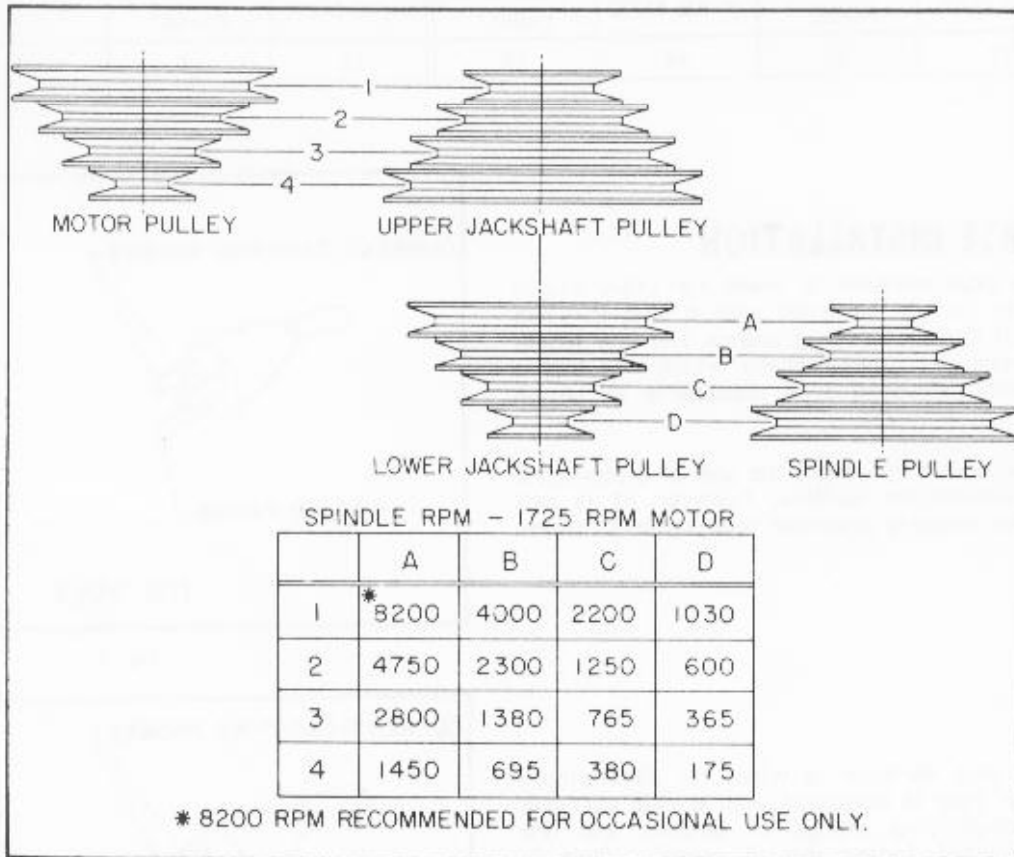


Fig. 7

CHANGING SPINDLE SPEEDS AND ADJUSTING BELT TENSION

1. Disconnect the drill press from the power source.
2. When changing the position of the belt on the spindle pulley and the lower jackshaft pulley (A) Fig. 8, simply loosen lock handle (B) and pivot the motor (C) forward to release belt tension. Position the belt (D) on the desired steps of the spindle and lower jackshaft pulleys and move the motor back until proper belt tension is obtained. Then tighten lock handle (B) Fig. 8.

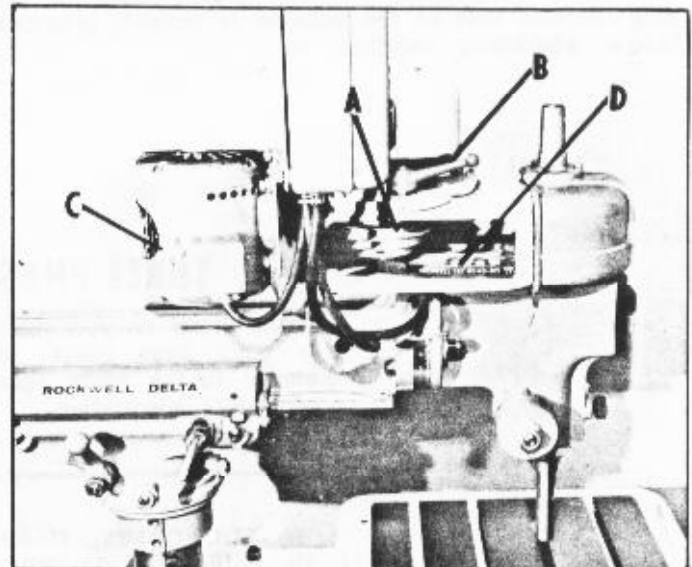


Fig. 8

3. When changing the position of the belt on the motor pulley (A) and upper jackshaft pulley (B) Fig. 9, raise the belt and pulley guard (F), loosen the two screws (one of which is shown at (C) Fig. 9) that attach the motor plate to the jackshaft bracket, and push in the motor plate (D) to release belt tension. Position the belt (E) on the desired steps of the motor and upper jackshaft pulleys and pull out the motor plate until proper belt tension is obtained. Then tighten the two screws (C) Fig. 9.

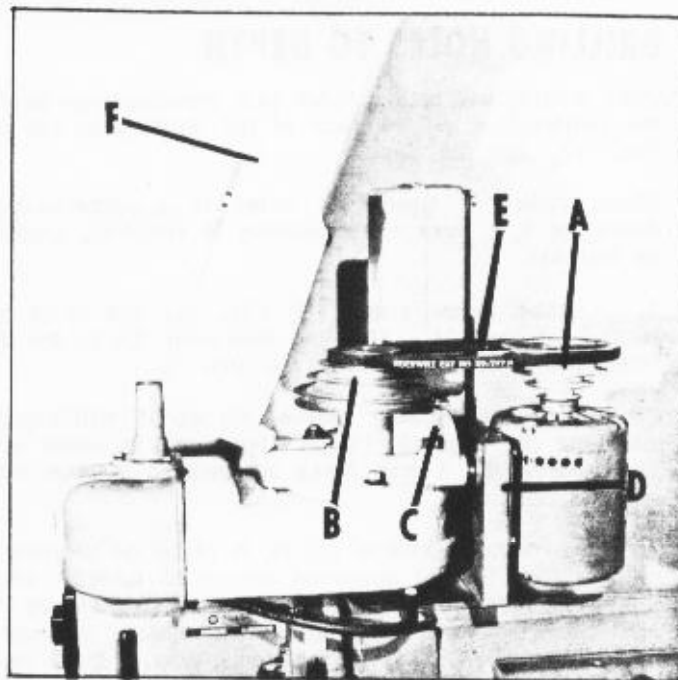


Fig 9

SPINDLE AND QUILL ADJUSTMENTS

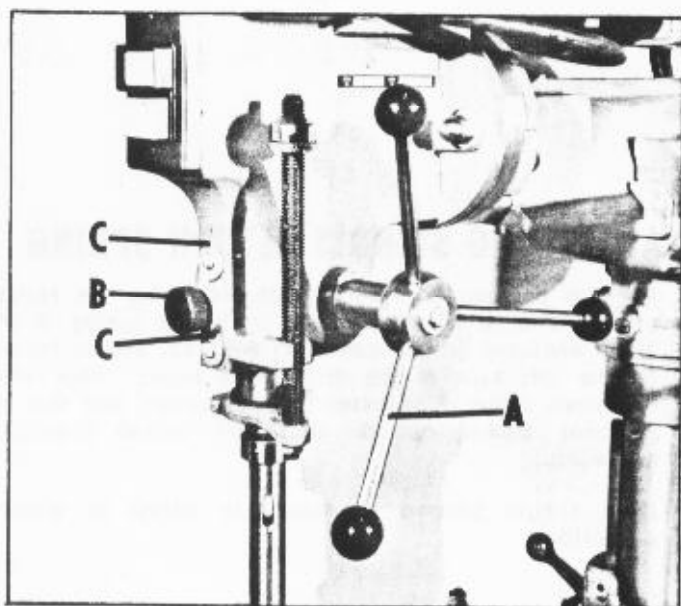


Fig 10

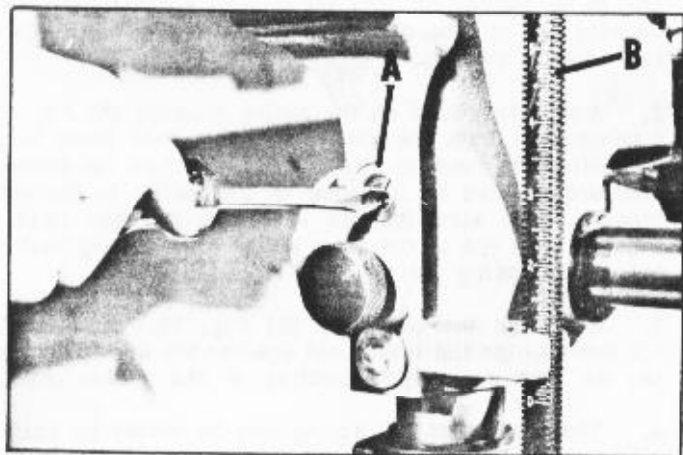


Fig. 11

The spindle is raised or lowered by means of the three spoke hand lever (A) Fig. 10. The quill can be locked at any desired point in its travel, by tightening the quill locking knob (B) Fig. 10. This is an especially desirable feature for set-up of tooling for production type operations.

After considerable use, play may develop between the quill and the head casting due to wear. To compensate for wear between the quill and head, proceed as follows:

1. Make sure the quill locking knob (B) Fig. 10, is loose.
2. Remove two screws and washers (C) Fig. 10.
3. Tighten the two quill adjusting screws (A) Fig. 11 which are located directly underneath the two screws and washers. It is not necessary to tighten these screws too much.
4. Rotate pilot wheel to test movement of quill and play. If there is a slight "drag", quill adjusting screws have been adjusted too tight. Back off quill adjusting screws slightly. If the quill still has play, slightly tighten quill adjusting screws.
5. When making this adjustment, make sure the stop rod (B) Fig. 11, moves freely up and down.
6. After proper adjustment has been made, replace screws and washers (C) Fig. 10.

DRILLING HOLES TO DEPTH

When drilling one or two holes to a predetermined depth, the calibrations on the face of the depth stop rod (A) Fig. 12, can be used.

When drilling a number of holes to a predetermined depth, or if a more exact setting is required, proceed as follows:

1. Loosen thumb screw (B) Fig. 12, and raise the locking sleeve (C). Turn the micro-nut (D) to the desired position on the stop rod (A).
2. Lower the locking sleeve (C) so it will engage micro-nut (D) Fig. 12. Lock sleeve (C) in place with thumb screw (B) if drill press is operated in other than vertical position.
3. When locking sleeve (C) is in place on the micro-nut (D) Fig. 12, the micro-nut cannot be turned. When a change in depth is required, the locking sleeve (C) must be raised, and while it is raised, turn the micro-nut (D) the necessary calibration marks. Each mark represents .002". Then lower the locking sleeve (C).
4. The use of the micro-set stop nut will maintain the same hole depth, no matter how many holes are to be drilled. However, we recommend that the hole depth be checked whenever a drill has to be sharpened or changed.

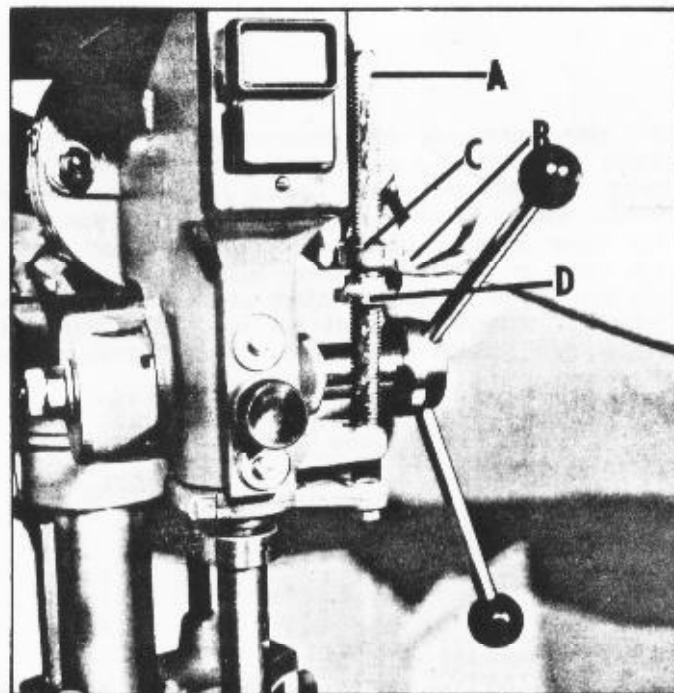


Fig. 12

ADJUSTING SPINDLE RETURN SPRING

For the purpose of automatically returning the spindle upward after a hole has been drilled, a spring is provided enclosed in the case (A) Fig. 13, and is located on the left side of the drill press head. This spring has been properly adjusted at the factory and this adjustment should not be disturbed unless absolutely necessary.

If it should become necessary to adjust it, proceed as follows:

1. Back off the two nuts (B) Fig. 13. NOTE: Do not remove the inside nut from the shaft. The nuts (B) should be backed off just far enough so that the spring housing (A) can be disengaged from the roll pin (C) in the head casting.
2. With a firm hold on the spring housing (A) Fig. 13, disengage it from the pin (C) in the drill press head, by pulling the housing straight out, and turn the housing counterclockwise to increase or clockwise to decrease tension. Be sure the pin in the drill press head is engaged with one of the other slots in the spring housing before releasing grip.
3. Retighten the two nuts (B) Fig. 13. NOTE: Do not over-tighten the inside nut against the spring housing (A) as this may cause binding of the pinion shaft.
4. The tension of the spring can be tested by turning pilot wheel counterclockwise. Be sure quill is not locked while testing.

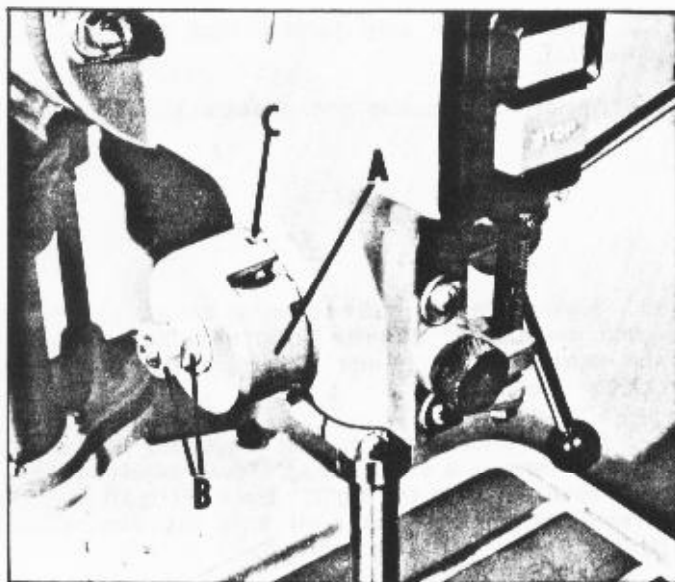


Fig. 13

RAISING OR LOWERING RAM AND DRILL HEAD

The ram and drill head is raised or lowered by loosening the lock handle (A) Fig. 14, and turning the elevating crank (B). This mechanism is carefully tested at the factory, but if knocked or jarred during shipment it may be misaligned. This misalignment will cause the crank to operate stiffly and impose an unnecessary strain on the gears. The trouble can be eliminated simply by loosening the nut (C) Fig. 14, on top of the elevating screw, and turning the crank until the screw aligns itself. Tighten the nut (C) securely after correct alignment has been attained. DO NOT FORCE THE ELEVATING CRANK.

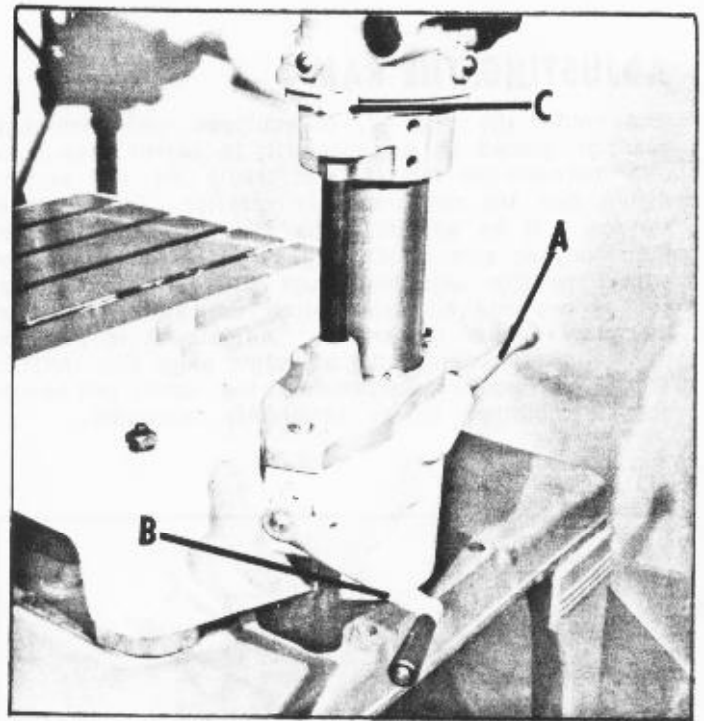


Fig. 14

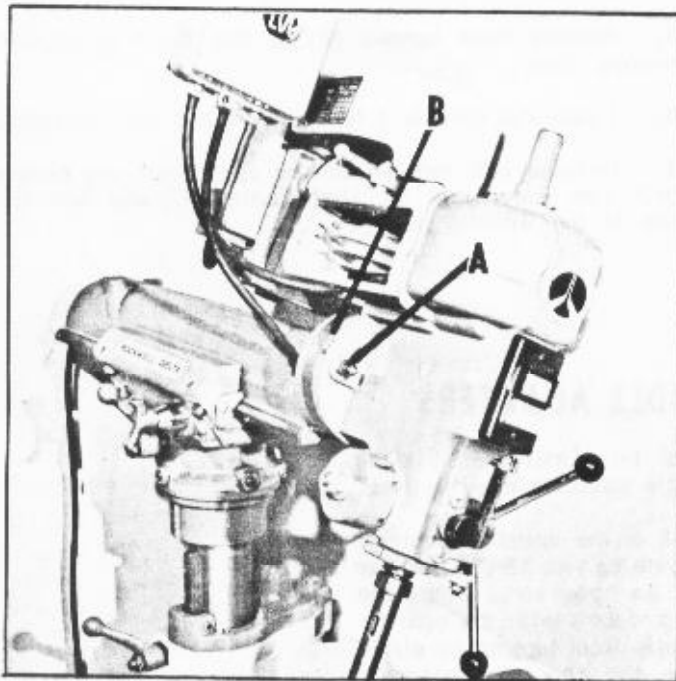


Fig. 15

TILTING THE HEAD

The drill head can be tilted up to 45 degrees right and left. To tilt the head, slightly loosen the two locks, one of which is shown at (A) Fig. 15, tilt the head to the desired position and tighten the two locks (A). An easy to read head tilt scale (B) and pointer permits setting of head at exact angle desired. IMPORTANT: THE HEAD MUST BE SECURELY HELD WHEN LOOSENING THE TWO LOCKS IN ORDER THAT IT WILL NOT SUDDENLY TILT CAUSING DAMAGE TO THE MACHINE OR INJURY TO YOURSELF.

OPERATING THE RAM

The ram (A) Fig. 16, can be moved in or out in the carriage (B) to provide a maximum distance of 31" from the center line of the spindle to the column and a minimum distance of 13".

To move the ram in or out, simply loosen lock knob (C), slide ram (A) to desired position, in or out, and tighten lock knob (C).

The ram (A) Fig. 16, will swing a full 360 degrees around the column for drilling anywhere on or off the table. To swing the ram, loosen handle (D) Fig. 16, rotate the carriage (B) to the desired angle and lock handle (D).

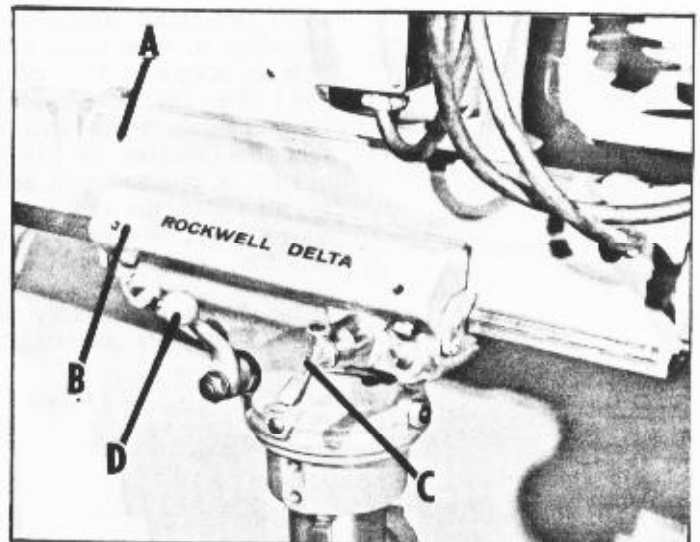


Fig. 16

ADJUSTING THE RAM

The cradle (B) Fig. 17, is equipped with eight ball bearings placed on an eccentric to permit take-up of wear between the ram (A) and cradle (B), and also to insure that the ram travel is parallel with the table surface. If an adjustment is ever necessary, loosen the four set screws (C) Fig. 17, located above and below the four adjusting plugs (D). Four additional set screws and adjusting plugs are also located on the other end of the cradle. Adjustment is made by tightening or loosening the adjusting plugs (D). NOTE: This adjustment has been made at the factory and should not be disturbed unless absolutely necessary.

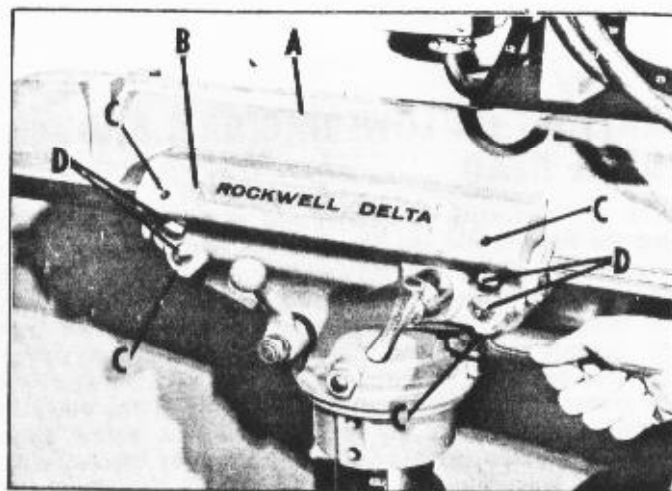


Fig. 17

REPLACING LOWER JACKSHAFT AND SPINDLE PULLEY BELT

If it ever becomes necessary to replace the lower belt (A) Fig. 18, proceed as follows:

1. Disconnect the machine from the power source.
2. Remove three screws (B) on cap (C) Fig. 18, and remove cap.
3. Lower the spindle 4 to 5 inches and lock in place.
4. Release belt tension on the lower belt and remove belt from underneath jackshaft pulley (D) and over the top of the spindle pulley.

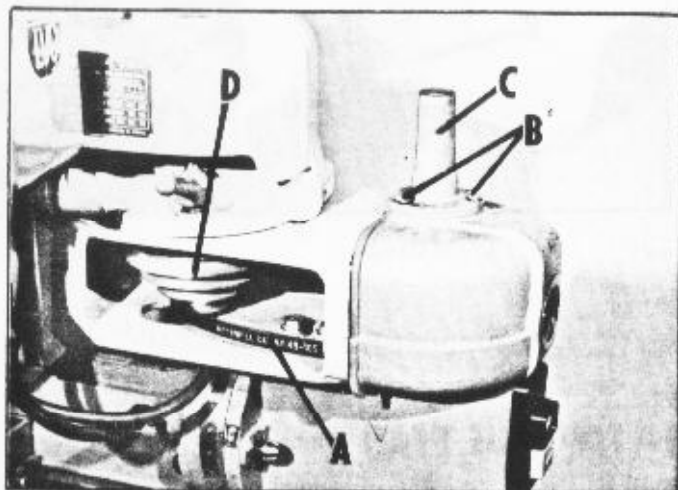


Fig. 18

HOW TO USE SPINDLE ADAPTERS

One of the unique features of this Drill Press is the ease with which various spindle adapters may be used.

When removing either the chuck or the spindle adapters, we recommend the use of the Catalog No. 15-838 spanner wrench which is available as an accessory. Turn the locking collar of the adapter or chuck with the spanner wrench while keeping the spindle from turning by either holding the V-belt or holding the chuck or adapter.

When attaching adapters to the spindle, it is very important to wipe clean both the spindle taper and taper hole in adapter. Then place the adapter on the spindle and tighten the locking collar. If in checking the spindle for accuracy, there should be a run out, we suggest that the adapter be removed and turned perhaps one quarter or one-half turn and replaced. This may reduce or eliminate the run out, it may also increase it, in which case, remove the adapter and turn it some more on the spindle.

Refer to the accessory section of this manual for a list of adapters available for your drill press.

ACCESSORIES

SPINDLE ADAPTERS



No. 15-832 Adapter with No. 1 M.T. hole, with threaded mounting collar. 2 lbs.



No. 15-833 Adapter with No. 2 M.T. hole, with threaded mounting collar. 1 lb.



No. 15-835 Adapter, $\frac{1}{2}$ " shaft and flange. For cup, dish or straight grinding wheels. With mounting collar tapped $1\frac{1}{4}$ "-20. 1 lb.

NOTE: Not suitable for use with Ram Type Radial Drill Press.



No. 15-836 Adapter with collars and threaded mounting collar for shaper cutters with $\frac{1}{2}$ " hole. 1 lb.

NOTE: Not suitable for use with Ram Type Radial Drill Press.



No. 15-837 Adapter, $\frac{1}{2}$ " hole, with threaded mounting collar for router and spur bits, etc. 1 lb.

No. 15-838 Spanner Wrench— $1\frac{1}{2}$ " x $5\frac{3}{4}$ " long, with single lug for $\frac{7}{32}$ " hole. Recommended for threaded mounting collar of Drill Chuck 15-830 or Adapters 15-832, 15-833, 15-835, 15-836 and 15-837. $\frac{1}{4}$ lb.



Machine Spur Bits—Production type. Made of selected steel. Have brad point and two cutting spur lips. Approximately 6" long with $\frac{1}{2}$ " shank. Weight per set 3 lbs.

No. 15-524 (old 804) $\frac{1}{4}$ "	No. 15-528 (old 808) $\frac{1}{2}$ "
No. 15-525 (old 805) $\frac{3}{16}$ "	No. 15-529 (old 809) $\frac{3}{8}$ "
No. 15-526 (old 806) $\frac{1}{2}$ "	No. 15-530 (old 810) $\frac{3}{4}$ "
No. 15-527 (old 807) $\frac{1}{2}$ "	No. 15-532 (old 812) $\frac{3}{4}$ "

No. 15-538 (old 818)—Complete set of 8 machine spur bits.



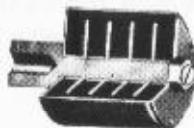
Plug Cutters—Used for making wood plugs and dowels. $\frac{1}{2}$ x 2" shank, barrel $2\frac{3}{4}$ " long. Cuts plugs 2" thick and dowels 2" long.

No. 15-534 (old 814) $\frac{1}{2}$ " dia.	No. 15-537 (old 817) $\frac{3}{4}$ " dia.
No. 15-535 (old 815) $\frac{1}{2}$ " dia.	No. 15-539 (old 819) 1" dia.
No. 15-536 (old 816) $\frac{3}{4}$ " dia.	

No. 15-542 (old 822)—Complete set of 5 plug cutters. $2\frac{1}{4}$ lbs.

SANDING DRUMS AND ABRASIVE SLEEVES FOR INSIDE AND CURVED WORK ON YOUR DRILL PRESS

Perfect work is easy with these sanding drums. No fasteners to bump—no uneven expansion. In these drums, each rubber section is separated from its neighbor by bakelite washers, with non-corrosive metal bushings next to the arbor. Disks expand uniformly, run dead true, produce perfect work.



No. 46-038 (old 830) Drum, 3" dia. x 3", with one sleeve. Fits $\frac{1}{2}$ " dia. shaft. 2 lbs.

No. 46-138 (old 831) Sleeves, $\frac{1}{2}$ doz. 3 x 3". 40 grit coarse garnet. $\frac{1}{2}$ lb.

No. 46-832 (old 832) Sleeves, $\frac{1}{2}$ doz., 3 x 3". 60 grit medium garnet. $\frac{1}{2}$ lb.

No. 46-338 (old 833) Sleeves, $\frac{1}{2}$ doz., 3 x 3". 50 grit al. ox. (for metal). $\frac{1}{2}$ lb.



No. 46-538 (old 835) Drum, $1\frac{3}{4}$ " dia. x 2", with one sleeve. Fits $\frac{1}{2}$ " dia. shaft. $1\frac{3}{4}$ lbs.

No. 46-638 (old 836) Sleeves, $\frac{1}{2}$ doz., $1\frac{3}{4}$ x 2". 40 grit med. garnet. $\frac{1}{4}$ lb.

No. 46-837 (old 837) Sleeves, $\frac{1}{2}$ doz., $1\frac{3}{4}$ x 2". 60 grit fine garnet. $\frac{1}{4}$ lb.

No. 46-838 (old 838) Sleeves, $\frac{1}{2}$ doz., $1\frac{3}{4}$ x 2". 50 grit al. oxide (for metal). $\frac{1}{4}$ lb.



No. 46-048 (old 840) Drum, $1\frac{1}{2}$ " dia. x $2\frac{1}{2}$ ", with one sleeve. With $\frac{1}{2}$ " shank to fit hollow spindle or chuck. $\frac{1}{2}$ lb.

No. 46-841 (old 841) Sleeves, $\frac{1}{2}$ doz., $1\frac{1}{2}$ x $2\frac{1}{2}$ ". 50 grit med. garnet. $\frac{1}{2}$ lb.

No. 46-248 (old 842) Sleeves, $\frac{1}{2}$ doz., $1\frac{1}{2}$ x $2\frac{1}{2}$ ". 80 grit fine, garnet. $\frac{1}{2}$ lb.

No. 46-847 (old 847) Sleeves, $\frac{1}{2}$ doz., $1\frac{1}{2}$ x $2\frac{1}{2}$ ". 50 grit al. oxide (for metal). $\frac{1}{2}$ lb.

NARROW SANDING DRUMS AND SLEEVES

Drums of solid rubber for use in 3-jaw chuck.

No. 46-679 (old 679) Drum, $1\frac{1}{2}$ " dia. x 1", with one sleeve. $\frac{3}{16}$ " shank. $\frac{1}{2}$ lb.



No. 46-682 (old 682) Sleeves, $\frac{1}{2}$ doz., $1\frac{1}{2}$ x 1". 40 grit al. oxide. $\frac{1}{4}$ lb.

No. 46-683 (old 683) Sleeves, $\frac{1}{2}$ doz., $1\frac{1}{2}$ x 1". 80 grit al. oxide. $\frac{1}{4}$ lb.

No. 46-680 (old 680) Drum, $2\frac{3}{16}$ " dia. x 1", with one sleeve. $\frac{3}{16}$ " shank. $\frac{1}{2}$ lb.

No. 46-684 (old 684) Sleeves, $\frac{1}{2}$ doz., $2\frac{3}{16}$ x 1". 40 grit al. oxide. $\frac{1}{4}$ lb.

No. 46-685 (old 685) Sleeves, $\frac{1}{2}$ doz., $2\frac{3}{16}$ x 1". 80 grit al. oxide. $\frac{1}{4}$ lb.

No. 46-681 (old 681) Drum, 3" dia. x 1", with one sleeve. $\frac{3}{16}$ " shank. $\frac{3}{4}$ lb.

No. 46-686 (old 686) Sleeves, $\frac{1}{2}$ doz., 3 x 1". 40 grit al. oxide. $\frac{1}{2}$ lb.

No. 46-687 (old 687) Sleeves, $\frac{1}{2}$ doz., 3 x 1". 80 grit al. oxide. $\frac{1}{2}$ lb.



Mortising Chisels—Production type. Made of selected steel. Shank of chisel is $\frac{3}{8}$ x $1\frac{1}{2}$ ".

No. 15-404 (old 504) — $\frac{1}{4}$ x $\frac{1}{4}$ ", mortises $1\frac{7}{8}$ " deep.

No. 15-405 (old 505) — $\frac{3}{16}$ x $\frac{3}{16}$ ", mortises $1\frac{7}{8}$ " deep.

No. 15-406 (old 506) — $\frac{3}{8}$ x $\frac{3}{8}$ ", mortises 3" deep.

No. 15-408 (old 508) — $\frac{1}{2}$ x $\frac{1}{2}$ ", mortises 3" deep.

Mortising Chisel Bits—Of selected steel. Bit operates inside chisel.

No. 15-514 (old 514) — $\frac{1}{4}$ " bit x $\frac{3}{16}$ " dia. shank.

No. 15-515 (old 515) — $\frac{3}{16}$ " bit x $\frac{1}{4}$ " dia. shank.

No. 15-516 (old 516) — $\frac{3}{8}$ " bit x $1\frac{3}{16}$ " dia. shank.

No. 15-517 (old 518) — $\frac{1}{2}$ " bit x $1\frac{3}{16}$ " dia. shank.

KEY CHUCK

No. 46-968 (old 968) Drill Chuck—3-jaw type, 0 to $\frac{1}{2}$ " capacity, with No. 2 M.T. shank. Includes chuck key. $2\frac{1}{2}$ lbs.



No. 25-857 Lamp Attachment, for 115 V. Includes 18" flexible gooseneck, reflector and 8-foot cord with 2-prong plug. Uses standard bulb (not included) up to 75 watts. 3 lbs.

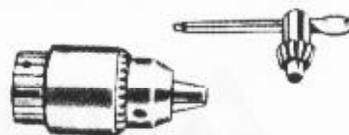
MOTOR PULLEYS

No. 41-772 Four-Step— $\frac{1}{2}$ " bore. 1 lb.
No. 41-773 Four-Step— $\frac{3}{8}$ " bore. 1 lb.

BELTS

No. 49-287 (old 287) V-Belt, $31\frac{1}{8}$ " OC, for Ram Type Radial Drill Presses (rear belt). $\frac{1}{2}$ lb.

No. 49-105 V-Belt, $30\frac{1}{8}$ " OC, for Ram Type Radial Drill Presses (front belt). $\frac{1}{2}$ lb.



No. 15-830 Drill Chuck—Key Chuck, 0- $\frac{1}{2}$ " capacity, 3-jaw type, with threaded mounting collar and key. $1\frac{1}{2}$ lbs.

PARTS DISTRIBUTION CENTERS FOR DELTA INTERNATIONAL MACHINERY

Even quality built equipment such as the Delta machine you have purchased, may require occasional replacement parts to maintain it in good working condition over the years. To order replacement parts, write or call one of the following Delta Parts Distribution Centers:

Van Nuys, CA 91406
16259 Stagg Street
Phone: (818)989-1242

Memphis, TN 38118
4290 Raines Road
Phone: (901)363-8800

HOTLINE
(800) 233-PART
(In California (800) 235-PART)

HOTLINE
(800) 233-PART
(In Tennessee (800) 238-PART)

Always include the following information:

1. Model No. and Serial No. and all specifications shown on the Model No./Serial No. plate
2. Part number or numbers as shown in the Replacement Parts list supplied with your Delta machine.

▲ DELTA

Delta Machinery
One Year Limited Warranty

Delta Machinery will repair or replace, at its expense and at its option, any Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer notifies his supplying distributor of the alleged defect within one year from the date of delivery to him, of the product and provides Delta Machinery with reasonable opportunity to verify the defect by inspection. Delta Machinery may require that electric motors be returned prepaid to the supplying distributor or authorized service center for inspection and repair or replacement. Delta Machinery will not be responsible for any asserted defect which has resulted from misuse, abuse or repair or alternation made or specifically authorized by anyone other than an authorized Delta service facility or representative. Under no circumstances will Delta Machinery be liable for incidental or consequential damages resulting from defective products. This warranty is Delta Machinery's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by Delta.

Part No. 400-06-652-5002

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Delta International Machinery Corp.
246 Alpha Drive, Pittsburgh, PA 15238